Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1-48. (Canceled)

49. (Currently Amended) A method for producing a silicon single crystal according to Czochralski method, the method comprising:

melting a raw material in a crucible;

contacting a seed crystal on a melt surface; and

growing a silicon single crystal by using an apparatus, wherein

Cu concentration in a component made of quartz to be used in a part in which a temperature in a furnace for single crystal growth is 1000 °C or more is 1 ppb or less, and Cu concentration in a component made of quartz to be used in a part in which a temperature in the furnace for single crystal growth is less than 1000 °C is 10 ppb or ~~less.~~ less, and

the components made of quartz are other than the crucible,

so that a defect region in the silicon single crystal contains Nv region outside an OSF ring over an entire region in a direction of a crystal growth axis and Cu concentration in the silicon single crystal is less than 1×10^{12} atoms/cm^3.

50. (Previously Presented) A method for producing a silicon single crystal according to Claim 49, wherein devices and components of the apparatus being exposed in the furnace for single crystal growth do not contain Cu as a raw material.

51-54. (Canceled)

55. (Previously Presented) The method for producing a silicon single crystal according to Claim 49, wherein the method further comprises cleaning in-furnace components in the furnace by:

taking out the in-furnace components of the furnace,

transferring the in-furnace components to another room in which cleanliness in the room environment is class 1000 or more, and

cleaning the in-furnace components in the another room while maintaining the cleanliness in the room environment of the another room to be class 1000 or more.

56. (Previously Presented) The method for producing a silicon single crystal according to Claim 50, wherein the method further comprises cleaning in-furnace components in the furnace by:

taking out the in-furnace components of the furnace,

transferring the in-furnace components to another room in which cleanliness in the room environment is class 1000 or more, and

cleaning the in-furnace components in the another room while maintaining the cleanliness in the room environment of the another room to be class 1000 or more.

57. (Previously Presented) The method for producing a silicon single crystal according to Claim 49, wherein after the silicon single crystal is grown, the method further comprises cleaning in-furnace components in the furnace by:

taking out the in-furnace components of the furnace,

transferring the in-furnace components to another room in which cleanliness in the room environment is class 1000 or more, and

cleaning the in-furnace components in the another room while maintaining the cleanliness in the room environment of the another room to be class 1000 or more; and

growing another silicon single crystal by using the cleaned in-furnace components.

58. (Previously Presented) The method for producing a silicon single crystal according to Claim 50, wherein after the silicon single crystal is grown, the method further comprises cleaning in-furnace components in the furnace by:

taking out the in-furnace components of the furnace,

transferring the in-furnace components to another room in which cleanliness in the room environment is class 1000 or more, and

cleaning the in-furnace components in the another room while maintaining the cleanliness in the room environment of the another room to be class 1000 or more; and

growing another silicon single crystal by using the cleaned in-furnace components.

59. (Previously Presented) The method for producing a silicon single crystal according to Claim 55, wherein when the in-furnace components are cleaned, cleaning tools and jigs which do not contain Cu as a raw material are used.

60. (Previously Presented) The method for producing a silicon single crystal according to Claim 56, wherein when the in-furnace components are cleaned, cleaning tools and jigs which do not contain Cu as a raw material are used.

61. (Previously Presented) The method for producing a silicon single crystal according to Claim 57, wherein when the in-furnace components are cleaned, cleaning tools and jigs which do not contain Cu as a raw material are used.

62. (Previously Presented) The method for producing a silicon single crystal according to Claim 58, wherein when the in-furnace components are cleaned, cleaning tools and jigs which do not contain Cu as a raw material are used.

63. (Previously Presented) The method for producing a silicon single crystal according to Claim 49, wherein the furnace for single crystal growth is provided in a room environment in which cleanliness is class 1000 or more.

64. (Previously Presented) The method for producing a silicon single crystal according to Claim 50, wherein the furnace for single crystal growth is provided in a room environment in which cleanliness is class 1000 or more.

65. (Previously Presented) The method for producing a silicon single crystal according to Claim 55, wherein after melting of a silicon raw material is finished, it is left for

3 hours or more on a condition that a heating heater is heated with an electric power of 80 % or more of the power in the raw material melting and flow amount of an inert gas introduced in the furnace for single crystal growth is flow amount in the single crystal growth or more.

66. (Previously Presented) The method for producing a silicon single crystal according to Claim 56, wherein after melting of a silicon raw material is finished, it is left for 3 hours or more on a condition that a heating heater is heated with an electric power of 80 % or more of the power in the raw material melting and flow amount of an inert gas introduced in the furnace for single crystal growth is flow amount in the single crystal growth or more.

67. (Previously Presented) The method for producing a silicon single crystal according to Claim 59, wherein after melting of a silicon raw material is finished, it is left for 3 hours or more on a condition that a heating heater is heated with an electric power of 80 % or more of the power in the raw material melting and flow amount of an inert gas introduced in the furnace for single crystal growth is flow amount in the single crystal growth or more.

68. (Previously Presented) The method for producing a silicon single crystal according to Claim 60, wherein after melting of a silicon raw material is finished, it is left for 3 hours or more on a condition that a heating heater is heated with an electric power of 80 % or more of the power in the raw material melting and flow amount of an inert gas introduced in the furnace for single crystal growth is flow amount in the single crystal growth or more.

69. (Previously Presented) The method for producing a silicon single crystal according to Claim 61, wherein after melting of a silicon raw material is finished, it is left for 3 hours or more on a condition that a heating heater is heated with an electric power of 80 % or more of the power in the raw material melting and flow amount of an inert gas introduced in the furnace for single crystal growth is flow amount in the single crystal growth or more.

70. (Previously Presented) The method for producing a silicon single crystal according to Claim 62, wherein after melting of a silicon raw material is finished, it is left for

3 hours or more on a condition that a heating heater is heated with an electric power of 80 % or more of the power in the raw material melting and flow amount of an inert gas introduced in the furnace for single crystal growth is flow amount in the single crystal growth or more.

71. (Previously Presented) The method for producing a silicon single crystal according to Claim 63, wherein after melting of a silicon raw material is finished, it is left for 3 hours or more on a condition that a heating heater is heated with an electric power of 80 % or more of the power in the raw material melting and flow amount of an inert gas introduced in the furnace for single crystal growth is flow amount in the single crystal growth or more.

72. (Previously Presented) The method for producing a silicon single crystal according to Claim 64, wherein after melting of a silicon raw material is finished, it is left for 3 hours or more on a condition that a heating heater is heated with an electric power of 80 % or more of the power in the raw material melting and flow amount of an inert gas introduced in the furnace for single crystal growth is flow amount in the single crystal growth or more.

73. (Currently Amended) A method for producing a silicon single crystal by Czochralski method, the method comprising:

melting a raw material in a crucible;

contacting a seed crystal on a melt surface; and

growing a silicon single crystal so that a defect region in the silicon single crystal contains Nv region outside an OSF ring over an entire region in a direction of a crystal growth axis and Cu concentration in the silicon single crystal is less than 1×10^{12} atoms/cm^3, wherein after melting of the raw material is finished, it is left for 3 hours or more on a condition that a heating heater is heated with an electric power of 80 % or more of the power in the raw material melting and flow amount of an inert gas introduced in a furnace for single crystal growth is flow amount in the single crystal growth or more, and then, the silicon single crystal is grown.

74. (Currently Amended) A method for producing a silicon single crystal according to Czochralski method, the method comprising:

cleaning in-furnace components in the furnace by

taking out the in-furnace components of the furnace,

transferring the in-furnace components to another room in which cleanliness in the room environment is class 1000 or more, and

cleaning the in-furnace components in the another room while maintaining the cleanliness in the room environment of the another room to be class 1000 or more;

melting a raw material in a crucible;

contacting a seed crystal on a melt surface; and

growing a silicon single crystal by using the in-furnace cleaned components, so that a defect region in the silicon single crystal contains Nv region outside an OSF ring over an entire region in a direction of a crystal growth axis and Cu concentration in the silicon single crystal is less than 1×10^{12} atoms/cm^3.

75-76. (Canceled)

77. (Currently Amended) A method for producing a silicon single crystal according to Czochralski method, the method comprising:

melting a raw material in a crucible;

contacting a seed crystal on a melt surface; and

growing a silicon single crystal by using ~~at least two or more of~~ an apparatus for producing a silicon single crystal according to Czochralski method, so that a defect region in the silicon single crystal contains Nv region outside an OSF ring over an entire region in a direction of a crystal growth axis and Cu concentration in the silicon single crystal is less than 1×10^{12} atoms/cm^3, wherein the apparatus has two or more of the following:

(1) Cu concentration in a component made of quartz to be used in a part in which a

temperature in a furnace for single crystal growth is 1000 °C or more that is 1 ppb or less, ~~and~~ Cu concentration in a component made of quartz to be used in a part in which a temperature in the furnace for single crystal growth is less than 1000 °C that is 10 ppb or less, and the components made of quartz that are other than the crucible;

(2) devices and components being exposed in the furnace for single crystal growth that do not contain Cu as a raw material; and

(3) Cu concentration in an observation window made of quartz provided in the furnace for single crystal growth that is 10 ppb or less.

78. (Currently Amended) A method for producing a silicon single crystal by Czochralski method, the method comprising:

melting a raw material in a crucible;

contacting a seed crystal on a melt surface; and

growing a silicon single crystal so that a defect region in the silicon single crystal contains Nv region outside an OSF ring over an entire region in a direction of a crystal growth axis and Cu concentration in the silicon single crystal is less than 1×10^{12} atoms/cm^3, wherein after melting of the raw material is finished, it is left for 3 hours or more on a condition that a heating heater is heated with an electric power of 80 % or more of the power in the raw material melting and flow amount of an inert gas introduced in the furnace for single crystal growth is flow amount in the single crystal growth or more, and then, a silicon single crystal is grown, and

wherein when in-furnace components in the furnace for single crystal growth are cleaned, the cleaning is performed in a room environment in which cleanliness is class 1000 or more, and a silicon single crystal is grown by using the in-furnace cleaned components.

79. (Canceled)